EXHIBIT 2b

INSTRUCTION MANUAL 651176500 A

CAMS-60b

Channelized Agile Modulator

Stock No. 5995B

MADE IN USA

BLONDER TONGUE LABORATORIES, INC.
One Jake Brown Road, P.O. Box 1000
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The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installers attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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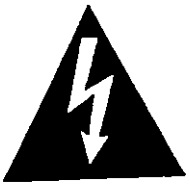

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NOTE TO CATV SYSTEM INSTALLER

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IMPORTANT SAFEGUARDS

1. **Read Instructions** - All the safety and operating instructions should be read before this product is operated.
2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions** - All operating and use instructions should be followed.
5. **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **Attachments** - Do not use attachments not recommended by Blonder Tongue as they may cause hazards.
7. **Water and Moisture** - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like. Refer to individual instruction manuals included with products designed for indoor use only. Do not expose these products to rain or moisture.
8. **Accessories** - Do not place this product on an unstable cart, stand, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, bracket, or table recommended by Blonder Tongue. Any mounting of the product should follow the instructions, and should use a mounting accessory recommended by Blonder Tongue.
9.  A product and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.
10. **Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the instructions are adhered to.
11. **Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home or business, consult your dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. **Grounding or Polarization** - If this product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

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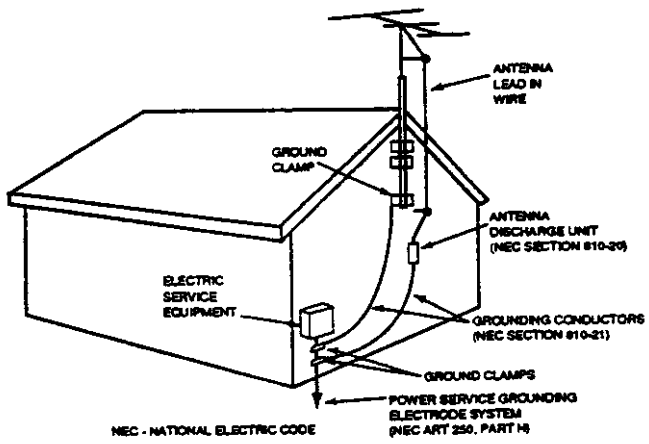
If this video product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other), the plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

13. **Power Cord Protection** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
14. **Lightning** - For added protection for this product during a lightning storm or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line-surges.
15. **Power Lines** - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
16. **Overloading** - Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
17. **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
18. **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
19. **Damage Requiring Service** - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power-supply cord or plug is damaged.
    b. If liquid has been spilled, or objects have fallen into the product.
    c. If the product has been exposed to rain or water.
    d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    e. If the product has been dropped or the cabinet has been damaged.
    f. When the product exhibits a distinct change in performance-this indicates a need for service.
20. **Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by Blonder Tongue or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
21. **Safety Check** - Upon completion of any service or repairs to this product ask the service technician to perform safety checks to determine that the product is in proper operating condition.
22. **Outdoor Antenna Grounding** - If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

See notes and diagram below.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



1. Drill a hole in wall (Careful! there are wires in that wall!) near set just large enough to permit entry of cable.
2. Punch cable through hole and form a rain drip loop close to where it enters house.
3. Put a small amount of caulking around cable where it enters house to keep out drafts.
4. Install static electricity discharge unit.
5. Connect antenna cable to set.

DESCRIPTION

The CAMS-60b is a professional quality, channelized agile, heterodyne audio/video modulator. The basic unit provides audio and video modulated RF carrier output on any single CATV, VHF or UHF channel in the frequency range of 50 to 750 MHz. Any standard audio/video source can be used, such as satellite receivers, television cameras, video tape recorders, or television demodulators. A low cost, removable, single channel output filter module is used to provide channelized configuration of the CAMS-60b. Customers can maintain an inventory of mainframes and a variety of output filter modules. Configuration of individual channels can be easily accomplished by combining the frequency agile mainframe with the appropriate output filter module.

The CAMS-60b accepts standard polarity (sync negative) video in the range of 0.7 to 2.0V p-p. A field selectable audio input allows for 600 ohm baseband or 4.5 MHz subcarrier modulated audio usage. The latter is available for stereo generators that deliver 4.5 MHz subcarrier output. Audio pre-emphasis is jumper selectable to properly accommodate either transmissions of stereo or monaural signals. True vestigial sideband selectivity and FCC group delay pre-distortion are maintained using a custom SAW filter. An external composite IF loop is provided which allows interfacing with Blonder Tongue's video all-call system. The heterodyne conversion process employs a crystal referenced PLL synthesized local oscillator with 12.5 KHz tuning increments. This guarantees very stable output frequency for the life of the modulator. The CAMS-60b meets FCC Docket 21006 aeronautical frequency offset requirements (±5 KHz video carrier accuracy). Surface mount technology is utilized to provide superior performance and extremely high reliability.

The CAMS-60b is housed in a single height, 1.75" high, rack mountable, aluminum chassis. The unit has a complete set of front panel accessible controls including: video modulation, audio modulation, visual to aural carrier ratio, and RF output level.

FEATURES

- Exceptional performance, CATV quality audio/video modulator
- PLL synthesized frequency control of 4.5 MHz aural carrier and RF Output
- Custom saw filter providing true VSB response with built-in FCC group delay pre-distortion
- Meets FCC Docket 21006 Aeronautical frequency offset requirements
- -60 dBc spurious response over the full output level range
- -120 dBc typical broadband noise for 110 channel system
- Fully compatible with BTSC encoded MTS stereo audio
- Jumper selectable audio pre-emphasis
- Accepts external 4.5 MHz input
- Field replaceable channelized output filter module
- -20 dB test point, front panel accessible
- Three year product warranty

OPTIONS

1. External IF In
2. Reference Lock
5. BTSC Stereo Encoder Module

SPECIFICATIONS *

RF

Frequency Range:	50 - 750 MHz, CATV, VHF and UHF channels
Output Level	
50 - 550 MHz:	+60 dBmV min.
550 - 750 MHz:	+58 dBmV min.
Output Level Adjust:	15 dB, continuously adjustable
Aural/Visual Carrier Ratio:	-9dB to -20dB, continuously adjustable
Visual Carrier Frequency Tolerance:	±10 KHz, Standard channels; ±5 KHz, FCC offset channels
Aural Carrier Frequency:	4.5 MHz above visual ±50 Hz
Channel VSB Selectivity:	
fv -1.25 MHz (channel edge):	25 dB typ., 15 dB min
fv -1.5 MHz (adj. aural carr.):	40 dB min
fv -2.42 MHz:	42 dB min
fv -3.58 MHz:	42 dB min
fv -6.0 MHz:	55 dB typ., 45 dB min
fv +6.0 MHz (Adj. Visual Carr.):	55 dB typ., 45 dB min
Spurious Outputs:	-66 dBc typ., -60 dBc min
In Channel C/N Ratio:	68 dB in 4 MHz BW
Broadband Noise:	-120 dBc in 4 MHz BW
Output Impedance:	75 ohm
Output Return Loss:	18 dB

IF

Frequency:	45.75 MHz
Composite IF Loop:	Visual carrier, +35 dBmV; Aural carrier, +20 dBmV ±5 dBmV
Input/Output Return Loss:	16 dB

VIDEO

Input Level:	.7 V p-p for 87.5% modulation
Video Response:	±0.5 dB, 25 Hz to 4.2 MHz
P-P Video to RMS Hum Ratio:	65 dB
Video Signal-To-Noise Ratio:	64 dB, weighted
Differential Gain:	2%
Differential Phase:	1°
Group Delay Response:	Meets FCC group delay pre-distortion requirement for color transmission
Chrominance - Luminance Gain Inequality:	±5 IRE
Chrominance - Luminance Delay Inequality:	-170 ns
Tilt:	2%
Input Impedance:	75 ohm
Input Return Loss:	30 dB

AUDIO

Input Level:	-10 dBm to +10 dBm for 25 KHz peak deviation
Frequency Response	
30 Hz - 15 KHz:	±0.5 dB (w/pre-emphasis)
50 Hz - 50 KHz:	±0.1 dB (w/o pre-emphasis, external stereo input)
Pre-emphasis:	75 µs, jumper selectable
Audio Signal-To-Noise Ratio	
Mono, 25 KHz Dev.:	65 dB
Stereo, 50 KHz Dev.:	60 dB (external stereo input)
Total Harmonic Distortion	
30 Hz - 15 KHz @25 KHz Deviation:	1%
Input Impedance:	600 ohm, balanced
Overmodulation Indicator:	Mono, 25 KHz ±2 KHz Stereo, 55 KHz ±4 KHz
4.5 MHz Input Level:	+40 dBmV ±5 dB

GENERAL

Power Requirements:	105 - 130 VAC, 60 Hz, 14 W
Fuse:	.31 A, Type T
Temperature Range:	0° to +50° C
Dimensions (WxHxD)	19" x 1.75" x 14.25"

CONNECTORS

Audio Input:	8 position terminal block
Video Input:	"F" type, female
Composite IF In/Out:	"F" type, female
4.5 MHz In:	"F" type, female
RF Output:	"F" type, female
-20 dB RF Output:	"F" type, female

CONTROLS

Channel (Frequency) Selector:	DIP switches, 18 position, internal
Video Modulation:	Front panel control
Audio Modulation:	Front panel control
Mono/Stereo Modulation:	Front panel control (w/Option 5)
Aural Level (A/V ratio control):	Front panel control
RF Level:	Front panel control
Audio Input Switch:	2 position, rear panel, 600 ohm audio/4.5 MHz
Mono/Stereo Switch:	2 position, rear panel

INDICATORS

Video Over-Modulation:	LED, red
Audio Over-Modulation:	LED, red
Power:	LED, green
External IF In:	LED, green (w/Option 1)
Reference Lock:	LED, green (w/Option 2)
BTSC Stereo:	LED, red (w/Option 5)

ACCESSORIES

IF loop cable, 1 each

* Option specifications are included with the Option description

INSTALLATION AND OPERATION

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UNPACKING AND HANDLING

UNPACKING. Each unit is shipped with all equipment assembled, wired, factory tested, and then packaged in an appropriate shipping container.

Ensure that all accessories are removed from the container and packing material before they are discarded. This includes the IF Jumper Cable which must be installed to make the unit operational.

MECHANICAL INSPECTION

Inspect the front and rear of the equipment for shipping damage. Make sure that the equipment is clean, and no wires, cables or connectors are broken, damaged or loose.

DAMAGE IN SHIPMENT

Should damage be discovered after unpacking the system, immediately file a claim with the carrier. A full report of the damage shall be made and a copy forwarded to Blonder Tongue Laboratories, Inc. The company will then advise what disposition is to be made of the equipment.

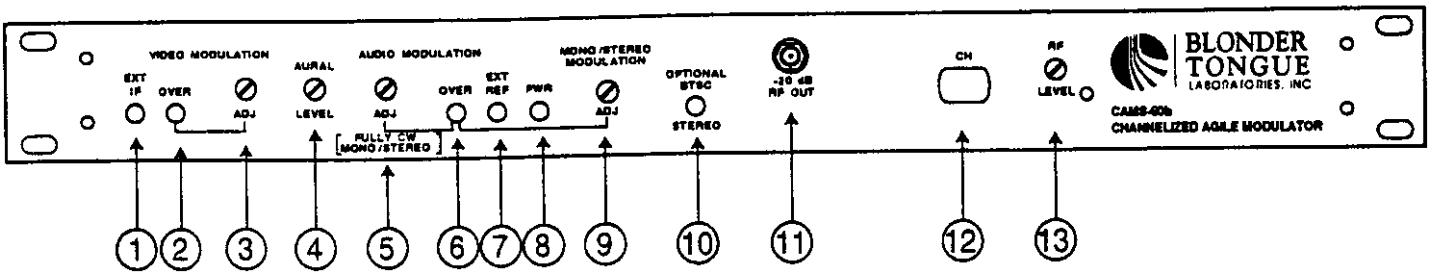
PRECAUTIONS

Adherence to the initial installation precautions outlined in the Table below will help prevent problems arising during initial installation and future maintenance of the unit.

PRECAUTION	REQUIREMENT
Avoid Heat Buildup.	Allow (1) EIA rack space (1-3/4") between Units in the equipment racks.
Ensure Easy Access to Rack Wiring.	Allow a minimum of 18" clearance behind equipment rack(s).
Faciliate Servicing and Maintenance.	Allow a minimum of 36" clearance in front of equipment rack(s).
Avoid Direct Heating or Air Conditioning.	If unavoidable, use deflector plates.
AC Power Source Outlets.	Locate equipment near enough to outlets to provide power for test equipment and power tools.
Rack Support.	Make certain rack supports are sufficiently rigid to support rack(s).
Building Leakage.	Beware of dripping water onto equipment from leaky roofs, waveguide roof entries, and cold water pipe condensations.

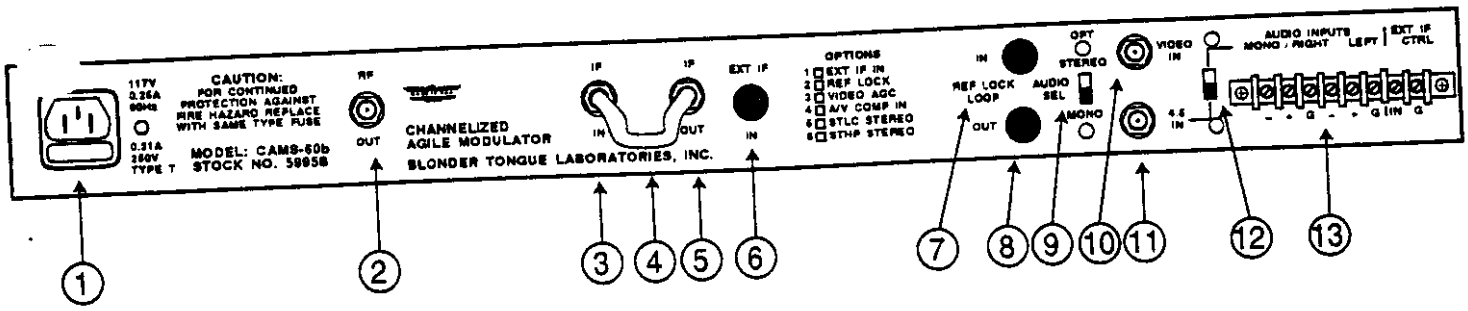
TABLE 1 Installation Precautions

OPERATING CONTROLS



Front Panel Controls and Indicators

1. **EXTERNAL IF LED** - When the External IF option is present, the LED indicates that an external IF signal has been selected over the internally generated IF signal as the source for the IF out
2. **VIDEO OVERMODULATION LED** - Lights when the modulation exceeds 87.5%
3. **VIDEO LEVEL** - Adjusts the percentage of video modulation
4. **AURAL CARRIER** - Controls the amplitude of the aural carrier to change the aural/visual ratio
5. **AUDIO LEVEL** - Adjusts the aural carrier modulation. When stereo option is present, should be set fully CW
6. **AUDIO OVERMODULATION LED** - Lights when the aural carrier peak deviation is over 25 KHz in Mono mode and over 55 KHz when the Stereo option is present and the rear panel audio select switch is set to Stereo
7. **EXTERNAL REFERENCE LED** - When the External Reference option is present, the LED indicates that the internal visual carrier is phase locked to the external reference input
8. **POWER LED** - Indicates power is present and the fuse is good
9. **MONO/STEREO MODULATION** - Controls the modulation of the aural carrier when the Stereo option is present
10. **BTSC STEREO LED** - When the Stereo option and video input are present, the LED indicates the presence of the stereo pilot tone
11. **-20 dB RF OUT** - Test point output 20 dB below the RF output
12. **CHANNEL** - The channel number on the OFM-60 module is visible through this window
13. **RF LEVEL** - The Bridge-T pot simultaneously adjusts the amplitude of the aural and visual carriers to the final drive amplifier



Rear Panel Controls and Connections

1. **IEC POWER RECEPTACLE WITH FUSE** - The provided power cord is plugged into this receptacle. A slide-out drawer contains the AC fuse
2. **RF OUT** - The filtered RF signal is available for connection to a headend combiner
3. **IF IN** - The composite IF signal is looped to the PLL / Up-converter
4. **IF LOOP** - An F to F jumper cable is provided to loop the IF OUT to the IF IN
5. **IF OUT** - The combined SAW filtered and modulated IF signal appears at this port
6. **EXTERNAL IF IN** - For use with the External IF option

7 & 8. **REFERENCE LOCK LOOP** - For use with the Reference Lock option

9. **AUDIO SELECT** - Switches between the Mono and Stereo (when stereo option is present) mode of processing for the audio input
10. **VIDEO IN** - The modulator accepts standard negative sync video at a 0.7 to 2.5V pp level
11. **4.5 IN** - External 4.5 MHz modulated carrier input
12. **AUDIO INPUT SWITCH** - Selects between an external 4.5 MHz modulated aural carrier and the internally processed aural carrier
13. **AUDIO INPUTS/IF CONTROL** - Input connector for the Mono / Stereo audio signal and the External IF option control logic

PREPARATION FOR USE

After installing the unit make the following adjustments:

Output Level - Connect the IF Loop cable from the IF OUT to the IF IN connectors. Connect a suitable RF meter (Field Strength Meter or Spectrum Analyzer) to the RF OUT and tune to the visual carrier frequency. Adjust the RF LEVEL control to the desired visual carrier level.

Aural / Visual Carrier Ratio - Tune the level meter to the aural carrier frequency, then adjust the AURAL LEVEL control for the desired carrier ratio.

Video Level - With a nominal 1V pp video source connected, set the VIDEO MODULATION ADJ so that the VIDEO OVERMODULATION indicator just comes on. Verify with suitable test equipment or by using a TV, and checking picture contrast.

Audio Level - For monaural audio signals, connect the signal to the MONO / RIGHT terminals of the 8-pin terminal strip. Set the AUDIO INPUT switch to the UP position and the AUDIO SEL switch to the MONO position. Adjust the AUDIO MODULATION ADJ so that the AUDIO OVERMODULATION indicator flashes on the loudest peaks of the audio program. Monitor for a few minutes to assure the proper setting.

STEREO COMPATIBILITY OF THE CAMS-60b MODULATOR

The CAMS-60b is designed to accept either a standard monaural audio signal, a BTSC encoded baseband audio signal or a 4.5 MHz modulated subcarrier. It can also generate a BTSC encoded stereo signal when Option 5 is installed.

If a BTSC encoded baseband signal is used, the internal audio pre-emphasis circuit must be disabled. To do this, disconnect the unit from power and remove the unit cover. Locate the A/V modulator board (the board with the audio and video controls accessible through the front panel). Next, locate TH1 (behind Audio Level Adj pot) and put the shorting plug in the DISABLE position (Pins 2 and 3). This disables the audio pre-emphasis. Replace the unit cover. Connect the baseband stereo signal to the MONO / RIGHT terminals. Set the AUDIO INPUT switch to the UP position and the AUDIO SEL switch to STEREO. In the STEREO position the AUDIO OVERMODULATON indicator is set to come on when deviations exceed ±55 KHz (stereo peak deviation). Adjust the AUDIO MODULATION ADJ so the indicator just comes on. Monitor for a few minutes to assure proper setting.

If a 4.5 MHz modulated subcarrier is to be used, set the AUDIO INPUT switch to the 4.5 IN position. Neither the AUDIO MODULATION ADJ nor the AUDIO OVERMODULATION indicator are operational in this mode and no internal modifications to the modulator are required.

CHANGING THE OUTPUT FILTER MODULE

1. Unplug the modulator
2. Remove the unit cover
3. Remove the PLL module cover (located next to the RF Output).
4. Remove the two faceplate screws securing the Output Filter Module (OFM) to the faceplate
5. Note the connections of the two coax cables to the OFM before removing them
6. Remove the screw that secures the OFM L-mounting bracket to the chassis
7. Remove the OFM
8. Note the Channel Chart on the new OFM
9. Set the two sets of DIP switches, visible through the top of the PLL module, to the channel of the new OFM
10. Insert the new module, channel label up, and connect the two coax cables, OFM mounting hardware, PLL module cover and unit cover
11. Before reinstalling the unit in a rack, verify its operation by connecting the RF Out to an appropriate piece of test equipment. Use caution when connecting the modulator to test equipment because the output level may exceed +60 dBmV

CAMS-60b with STEREO OPTION

Description:

The CAMS-60b with the Stereo option (option 5) will convert the left and right channels from an audio source to the BTSC encoded stereo format used in television transmission. It can also be used for the transmission of standard monaural audio signals available from non-stereo sources.

Input Requirements

Audio Levels	
Stereo:	0.7 Vpp to 7 Vpp, typ (-10 dBm to +10 dBm)
Mono:	1 Vpp to 7 Vpp, typ
Video Level:	1 Vpp, typ

Connections:

Connect and make all adjustments for the video, IF loop thru and RF Out as described under Preparation For Use. The audio input signal may be balanced or unbalanced. If an unbalanced input is used, the unused terminal must be grounded via a short jumper to an adjacent ground terminal. Stereo input connections are made to the corresponding left and right terminals as indicated on the rear panel. A monaural input signal is connected to the right channel input with the left channel remaining either open or grounded.

Adjustments:

For stereo operation, the AUDIO SEL switch on the rear panel is set to the STEREO position and the AUDIO MODULATION ADJ is set fully CW. When the stereo option is present, the Audio modulation is controlled by the MONO/STEREO MODULATION ADJ. Internally, the programmable 75 µsec audio pre-emphasis must be set to the "Enable" position. This is the factory installed setting. If the shorting plug has been moved, it should be repositioned to connect pins 1 and 2 of TH1 on the A/V board.

The AUDIO OVERMODULATION indicator is configured to work in both the stereo and mono modes. When the AUDIO SEL switch is set to MONO, the LED will light when the deviation exceeds ±25 KHz. In the STEREO position the LED will light when the deviation exceeds ±55 KHz (±50 KHz program audio and ±5 KHz pilot tone). Adjust the MONO/STEREO MODULATION ADJ so that the overmod indicator flashes. Monitor for a few minutes to assure the proper setting.

For the BTSC STEREO indicator to light there must be an input video signal and the AUDIO SEL switch must be set to STEREO.

Specifications

Separation	
50 Hz - 10 KHz:	20 dB, typ
Frequency Response	
50 Hz - 10 KHz :	±1.5 dB, typ
Harmonic Distortion	
@1 KHz:	0.5 %, typ

FREQUENCY OFFSETS

The table on pages 10, 11 & 12 lists the switch settings for the standard cable TV and broadcast TV channel assignments. **0=UP=OFF** (as labeled on the switch). **The LO frequency is the sum weighting of the switches in the UP position.** The weighting of the specific switches are provided below:

Switch Bank 1

Switch#	Weight	Switch#	Weight
1	0.8 MHz	6	25.6 MHz
2	1.6 MHz	7	51.2 MHz
3	3.2 MHz	8	102.4 MHz
4	6.4 MHz	9	204.8 MHz
5	12.8 MHz	10	409.6 MHz

Switch Bank 2

Switch#	Weight	Switch#	Weight
1	VCO BandSwitch	5	50 KHz
2	VCO BandSwitch	6	100 KHz
3	12.5 KHz	7	200 KHz
4	25.0 KHz	8	400 KHz

To obtain a +12.5 KHz offset, move Switch Bank 2, Switch# 3 UP. If the switch is already in the UP position, move Switch Bank 2, Switch# 4 UP and move Switch Bank 2, Switch# 3 DOWN. (This add 25 KHz and subtracts 12.5 KHz.)

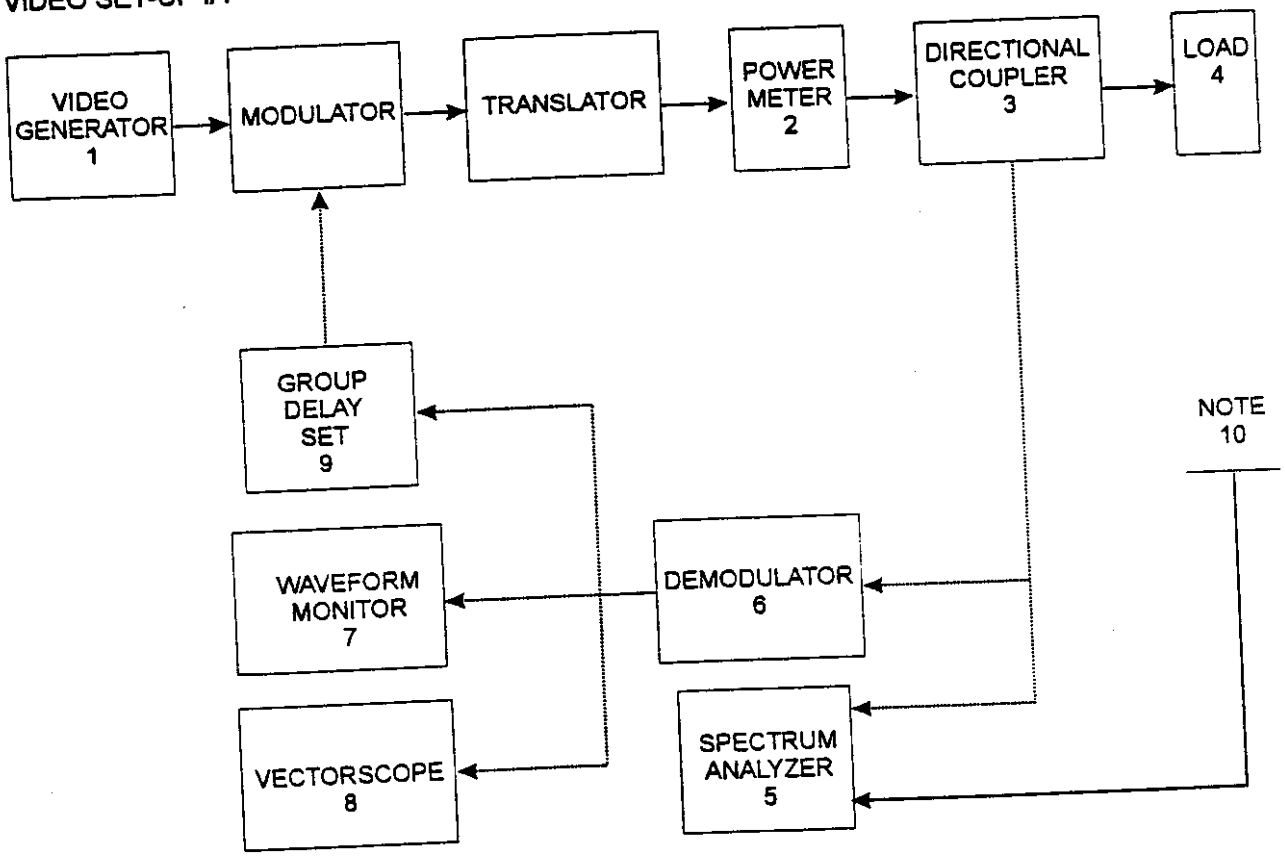
CHNL NO	VIDEO	LO	SWITCH ONE 1 = ON = DOWN 1	2	3	4	5	6	7	8	9	10	SWITCH TWO 1 = ON = DOWN 1	2	3	4	5	6	7	8
T7	7.0000	52.75	0	1	1	1	1	1	0	1	1	1	0	0	1	1	0	0	0	0
T8	13.0000	58.75	0	1	1	0	1	1	0	1	1	1	0	0	1	1	0	0	0	1
T9	19.0000	64.75	1	1	1	1	0	1	0	1	1	1	0	0	1	1	0	0	0	0
T10	25.0000	70.75	1	1	1	0	0	1	0	1	1	1	0	0	1	1	0	0	0	1
T11	31.0000	76.75	0	0	0	0	0	1	0	1	1	1	0	0	1	1	1	1	0	0
2	55.2500	101.00	1	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1	0	1
3	61.2500	107.00	0	1	0	1	1	1	1	0	1	1	0	0	1	1	1	1	0	0
4	67.2500	113.00	0	1	0	0	1	1	1	0	1	1	0	0	1	1	1	1	0	1
5	77.2500	123.00	0	1	1	0	0	1	1	0	1	1	0	0	1	1	1	1	0	0
6	83.2500	129.00	0	1	1	1	1	0	1	0	1	1	0	0	1	1	1	1	0	1
95	91.2500	137.00	0	0	1	0	1	0	1	0	1	1	0	0	1	1	1	1	0	1
96	97.2500	143.00	1	0	1	1	0	0	1	0	1	1	0	0	1	1	1	1	0	0
97	103.2500	149.00	1	0	1	0	0	0	1	0	1	1	0	0	1	1	1	1	0	1
98	109.2750	155.03	0	1	1	1	1	1	0	0	1	1	0	0	1	0	1	1	0	0
99	115.2750	161.03	0	1	1	0	1	1	0	0	1	1	0	0	1	0	1	1	0	1
14	121.2625	167.01	1	1	1	1	0	1	0	0	1	1	0	0	0	1	1	1	0	0
15	127.2625	173.01	1	1	1	0	0	1	0	0	1	1	0	0	0	1	1	1	0	1
16	133.2625	179.01	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	1	0	0
17	139.2500	185.00	0	0	0	1	1	0	0	0	1	1	0	0	1	1	1	1	0	1
18	145.2500	191.00	1	0	0	0	1	0	0	0	1	1	0	0	1	1	1	1	0	0
19	151.2500	197.00	1	0	0	1	0	0	0	0	1	1	0	0	1	1	1	1	0	1
20	157.2500	203.00	0	1	0	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0
21	163.2500	209.00	0	1	0	1	1	1	1	1	0	1	0	0	1	1	1	1	0	1
22	169.2500	215.00	1	1	0	0	1	1	1	1	0	1	0	0	1	1	1	1	0	0
7	175.2500	221.00	1	1	0	1	0	1	1	1	0	1	0	0	1	1	1	1	0	1
8	181.2500	227.00	0	0	1	0	0	1	1	1	0	1	0	0	1	1	1	1	0	0
9	187.2500	233.00	0	0	1	1	1	0	1	1	0	1	0	0	1	1	1	1	0	1
10	193.2500	239.00	1	0	1	0	1	0	1	1	0	1	0	1	1	1	1	1	0	0
11	199.2500	245.00	1	0	1	1	0	0	1	1	0	1	0	1	1	1	1	1	0	1
12	205.2500	251.00	0	1	1	0	0	0	1	1	0	1	0	1	1	1	1	1	0	0
13	211.2500	257.00	0	1	1	1	1	1	0	1	0	1	0	1	1	1	1	1	0	1
23	217.2500	263.00	1	1	1	0	1	1	0	1	0	1	0	1	1	1	1	1	0	0
24	223.2625	269.01	1	1	1	1	0	1	0	1	0	1	0	1	0	1	1	1	0	1
25	229.2625	275.01	0	0	0	1	0	1	0	1	0	1	0	1	0	1	1	1	0	0
26	235.2625	281.01	0	0	0	0	0	1	0	1	0	1	0	1	0	1	1	1	0	1
27	241.2625	287.01	1	0	0	1	1	0	0	1	0	1	0	1	0	1	1	1	0	0
28	247.2625	293.01	1	0	0	0	1	0	0	1	0	1	0	1	0	1	1	1	0	1
29	253.2625	299.01	0	1	0	1	0	0	0	1	0	1	0	1	0	1	1	1	0	0
30	259.2625	305.01	0	1	0	0	0	0	0	1	0	1	0	1	0	1	1	1	0	1
31	265.2625	311.01	1	1	0	1	1	1	1	0	0	1	0	1	0	1	1	1	0	0
32	271.2625	317.01	1	1	0	0	1	1	1	0	0	1	0	1	0	1	1	1	0	1
33	277.2625	323.01	0	0	1	1	0	1	1	0	0	1	0	1	0	1	1	1	0	0
34	283.2625	329.01	0	0	1	0	0	1	1	0	0	1	0	1	0	1	1	1	0	1
35	289.2625	335.01	1	0	1	1	1	0	1	0	0	1	0	1	0	1	1	1	0	0
36	295.2625	341.01	1	0	1	0	1	0	1	0	0	1	0	1	0	1	1	1	0	1
37	301.2625	347.01	0	1	1	1	0	0	1	0	0	1	0	1	0	1	1	1	0	0
38	307.2625	353.01	0	1	1	0	0	0	1	0	0	1	0	1	0	1	1	1	0	1
39	313.2625	359.01	1	1	1	1	1	1	0	0	0	1	0	1	0	1	1	1	0	0
40	319.2625	365.01	1	1	1	0	1	1	0	0	0	1	0	1	0	1	1	1	0	1
41	325.2625	371.01	0	0	0	0	1	1	0	0	0	1	0	1	0	1	1	1	0	0
42	331.2750	377.03	0	0	0	1	0	1	0	0	0	1	0	1	1	0	1	1	0	1
43	337.2625	383.01	1	0	0	0	0	1	0	0	0	1	0	1	0	1	1	1	0	0
44	343.2625	389.01	1	0	0	1	1	0	0	0	0	1	0	1	0	1	1	1	0	1
45	349.2625	395.01	0	1	0	0	1	0	0	0	0	1	0	1	0	1	1	1	0	0
46	355.2625	401.01	0	1	0	1	0	0	0	0	0	1	0	1	0	1	1	1	0	1
47	361.2625	407.01	1	1	0	0	0	0	0	0	0	1	0	1	0	1	1	1	0	0
48	367.2625	413.01	1	1	0	1	1	1	1	1	1	0	0	1	0	1	1	1	0	1

CHNL NO	VIDEO	LO	SWITCH ONE 1 = ON = DOWN										SWITCH TWO 1 = ON = DOWN							
			1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8
49	373.2625	419.01	0	0	1	0	1	1	1	1	1	0	0	1	0	1	1	1	0	0
50	379.2625	425.01	0	0	1	1	0	1	1	1	1	0	0	1	0	1	1	1	0	1
51	385.2625	431.01	1	0	1	0	0	1	1	1	1	0	0	1	0	1	1	1	0	0
52	391.2625	437.01	1	0	1	1	1	0	1	1	1	0	0	1	0	1	1	1	0	1
53	397.2625	443.01	0	1	1	0	1	0	1	1	1	0	0	1	0	1	1	1	0	0
54	403.2500	449.00	0	1	1	1	0	0	1	1	1	0	0	1	1	1	1	1	0	1
55	409.2500	455.00	1	1	1	0	0	0	1	1	1	0	0	1	1	1	1	1	0	0
56	415.2500	461.00	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	0	1
57	421.2500	467.00	0	0	0	1	1	1	0	1	1	0	0	1	1	1	1	1	0	0
58	427.2500	473.00	0	0	0	0	1	1	0	1	1	0	0	1	1	1	1	1	0	1
59	433.2500	479.00	1	0	0	1	0	1	0	1	1	0	0	1	1	1	1	1	0	0
60	439.2500	485.00	1	0	0	0	0	1	0	1	1	0	0	1	1	1	1	1	0	1
61	445.2500	491.00	0	1	0	1	1	0	0	1	1	0	0	1	1	1	1	1	0	0
62	451.2500	497.00	0	1	0	0	1	0	0	1	1	0	0	1	1	1	1	1	0	1
63	457.2500	503.00	1	1	0	1	0	0	0	1	1	0	0	1	1	1	1	1	0	0
64	463.2500	509.00	1	1	0	0	0	0	0	1	1	0	1	1	1	1	1	1	0	1
65	469.2500	515.00	0	0	1	1	1	1	1	0	1	0	1	1	1	1	1	1	0	0
66	475.2500	521.00	0	0	1	0	1	1	1	0	1	0	1	1	1	1	1	1	0	1
67	481.2500	527.00	1	0	1	1	0	1	1	0	1	0	1	1	1	1	1	1	0	0
68	487.2500	533.00	1	0	1	0	0	1	1	0	1	0	1	1	1	1	1	1	0	1
69	493.2500	539.00	0	1	1	1	1	0	1	0	1	0	1	1	1	1	1	1	0	0
70	499.2500	545.00	0	1	1	0	1	0	1	0	1	0	1	1	1	1	1	1	0	1
71	505.2500	551.00	1	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	0	0
72	511.2500	557.00	1	1	1	0	0	0	1	0	1	0	1	1	1	1	1	1	0	1
73	517.2500	563.00	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	1	0	0
74	523.2500	569.00	0	0	0	1	1	1	0	0	1	0	1	1	1	1	1	1	0	1
75	529.2500	575.00	1	0	0	0	1	1	0	0	1	0	1	1	1	1	1	1	0	0
76	535.2500	581.00	1	0	0	1	0	1	0	0	1	0	1	1	1	1	1	1	0	1
77	541.2500	587.00	0	1	0	0	0	1	0	0	1	0	1	1	1	1	1	1	0	0
78	547.2500	593.00	0	1	0	1	1	0	0	0	1	0	1	1	1	1	1	1	0	1
79	553.2500	599.00	1	1	0	0	1	0	0	0	1	0	1	1	1	1	1	1	0	0
80	559.2500	605.00	1	1	0	1	0	0	0	0	1	0	1	1	1	1	1	1	0	1
81	565.2500	611.00	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0
82	571.2500	617.00	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1
83	577.2500	623.00	1	0	1	0	1	1	1	1	0	0	1	1	1	1	1	1	0	0
84	583.2500	629.00	1	0	1	1	0	1	1	1	0	0	1	1	1	1	1	1	0	1
85	589.2500	635.00	0	1	1	0	0	1	1	1	0	0	1	1	1	1	1	1	0	0
86	595.2500	641.00	0	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	0	1
87	601.2500	647.00	1	1	1	0	1	0	1	1	0	0	1	1	1	1	1	1	0	0
88	607.2500	653.00	1	1	1	1	0	0	1	1	0	0	1	1	1	1	1	1	0	1
89	613.2500	659.00	0	0	0	1	0	0	1	1	0	0	1	1	1	1	1	1	0	0
90	619.2500	665.00	0	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	0	1
91	625.2500	671.00	1	0	0	1	1	1	0	1	0	0	1	1	1	1	1	1	0	0
92	631.2500	677.00	1	0	0	0	1	1	0	1	0	0	1	1	1	1	1	1	0	1
93	637.2500	683.00	0	1	0	1	0	1	0	1	0	0	1	1	1	1	1	1	0	0
94	643.2500	689.00	0	1	0	0	0	1	0	1	0	0	1	1	1	1	1	1	0	1
100	649.2500	695.00	1	1	0	1	1	0	0	1	0	0	1	1	1	1	1	1	0	0
101	655.2500	701.00	1	1	0	0	1	0	0	1	0	0	1	1	1	1	1	1	0	1
102	661.2500	707.00	0	0	1	1	0	0	0	1	0	0	1	1	1	1	1	1	0	0
103	667.2500	713.00	0	0	1	0	0	0	0	1	0	0	1	1	1	1	1	1	0	1
104	673.2500	719.00	1	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	0
105	679.2500	725.00	1	0	1	0	1	1	1	0	0	0	1	1	1	1	1	1	0	1
106	685.2500	731.00	0	1	1	1	0	1	1	0	0	0	1	1	1	1	1	1	0	0
107	691.2500	737.00	0	1	1	0	0	1	1	0	0	0	1	1	1	1	1	1	0	1
108	697.2500	743.00	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	0	0
109	703.2500	749.00	1	1	1	0	1	0	1	0	0	0	1	1	1	1	1	1	0	1
110	709.2500	755.00	0	0	0	0	1	0	1	0	0	0	1	1	1	1	1	1	0	0

CHNL NO	VIDEO	LO	SWITCH ONE 1 = ON = DOWN 1	2	3	4	5	6	7	8	9	10	SWITCH TWO 1 = ON = DOWN 1	2	3	4	5	6	7	8
111	715.2500	761.00	0	0	0	1	0	0	1	0	0	0	1	1	1	1	1	1	0	1
112	721.2500	767.00	1	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	0	0
113	727.2500	773.00	1	0	0	1	1	1	0	0	0	0	1	1	1	1	1	1	0	1
114	733.2500	779.00	0	1	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0
115	739.2500	785.00	0	1	0	1	0	1	0	0	0	0	1	1	1	1	1	1	0	1
116	745.2500	791.00	1	1	0	0	0	1	0	0	0	0	1	1	1	1	1	1	0	0
117	751.2500	797.00	1	1	0	1	1	0	0	0	0	0	1	1	1	1	1	1	0	1
								UHF												
14	471.2500	517.00	1	0	0	1	1	1	1	0	1	0	1	1	1	1	1	1	0	1
15	477.2500	523.00	0	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	0	0
16	483.2500	529.00	0	1	0	1	0	1	1	0	1	0	1	1	1	1	1	1	0	1
17	489.2500	535.00	1	1	0	0	0	1	1	0	1	0	1	1	1	1	1	1	0	0
18	495.2500	541.00	1	1	0	1	1	0	1	0	1	0	1	1	1	1	1	1	0	1
19	501.2500	547.00	0	0	1	0	1	0	1	0	1	0	1	1	1	1	1	1	0	0
20	507.2500	553.00	0	0	1	1	0	0	1	0	1	0	1	1	1	1	1	1	0	1
21	513.2500	559.00	1	0	1	0	0	0	1	0	1	0	1	1	1	1	1	1	0	0
22	519.2500	565.00	1	0	1	1	1	1	0	0	1	0	1	1	1	1	1	1	0	1
23	525.2500	571.00	0	1	1	0	1	1	0	0	1	0	1	1	1	1	1	1	0	0
24	531.2500	577.00	0	1	1	1	0	1	0	0	1	0	1	1	1	1	1	1	0	1
25	537.2500	583.00	1	1	1	0	0	1	0	0	1	0	1	1	1	1	1	1	0	0
26	543.2500	589.00	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	1	0	1
27	549.2500	595.00	0	0	0	1	1	0	0	0	1	0	1	1	1	1	1	1	0	0
28	555.2500	601.00	0	0	0	0	1	0	0	0	1	0	1	1	1	1	1	1	0	1
29	561.2500	607.00	1	0	0	1	0	0	0	0	1	0	1	1	1	1	1	1	0	0
30	567.2500	613.00	1	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	1
31	573.2500	619.00	0	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0
32	579.2500	625.00	0	1	0	0	1	1	1	1	0	0	1	1	1	1	1	1	0	1
33	585.2500	631.00	1	1	0	1	0	1	1	1	0	0	1	1	1	1	1	1	0	0
34	591.2500	637.00	1	1	0	0	0	1	1	1	0	0	1	1	1	1	1	1	0	1
35	597.2500	643.00	0	0	1	1	1	0	1	1	0	0	1	1	1	1	1	1	0	0
36	603.2500	649.00	0	0	1	0	1	0	1	1	0	0	1	1	1	1	1	1	0	1
37	609.2500	655.00	1	0	1	1	0	0	1	1	0	0	1	1	1	1	1	1	0	0
38	615.2500	661.00	1	0	1	0	0	0	1	1	0	0	1	1	1	1	1	1	0	1
39	621.2500	667.00	0	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	0	0
40	627.2500	673.00	0	1	1	0	1	1	0	1	0	0	1	1	1	1	1	1	0	1
41	633.2500	679.00	1	1	1	1	0	1	0	1	0	0	1	1	1	1	1	1	0	0
42	639.2500	685.00	1	1	1	0	0	1	0	1	0	0	1	1	1	1	1	1	0	1
43	645.2500	691.00	0	0	0	0	0	1	0	1	0	0	1	1	1	1	1	1	0	0
44	651.2500	697.00	0	0	0	1	1	0	0	1	0	0	1	1	1	1	1	1	0	1
45	657.2500	703.00	1	0	0	0	1	0	0	1	0	0	1	1	1	1	1	1	0	0
46	663.2500	709.00	1	0	0	1	0	0	0	1	0	0	1	1	1	1	1	1	0	1
47	669.2500	715.00	0	1	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0	0
48	675.2500	721.00	0	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1
49	681.2500	727.00	1	1	0	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0
50	687.2500	733.00	1	1	0	1	0	1	1	0	0	0	1	1	1	1	1	1	0	1
51	693.2500	739.00	0	0	1	0	0	1	1	0	0	0	1	1	1	1	1	1	0	0
52	699.2500	745.00	0	0	1	1	1	0	1	0	0	0	1	1	1	1	1	1	0	1
53	705.2500	751.00	1	0	1	0	1	0	1	0	0	0	1	1	1	1	1	1	0	0
54	711.2500	757.00	1	0	1	1	0	0	1	0	0	0	1	1	1	1	1	1	0	1
55	717.2500	763.00	0	1	1	0	0	0	1	0	0	0	1	1	1	1	1	1	0	0
56	723.2500	769.00	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	1
57	729.2500	775.00	1	1	1	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0
58	735.2500	781.00	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	1
59	741.2500	787.00	0	0	0	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0
60	747.2500	793.00	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	0	1
61	753.2500	799.00	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	0	0

APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
MODULATOR INPUT
1 WATT VHF TRANSLATOR

EXHIBIT 3a
VIDEO SET-UP #1

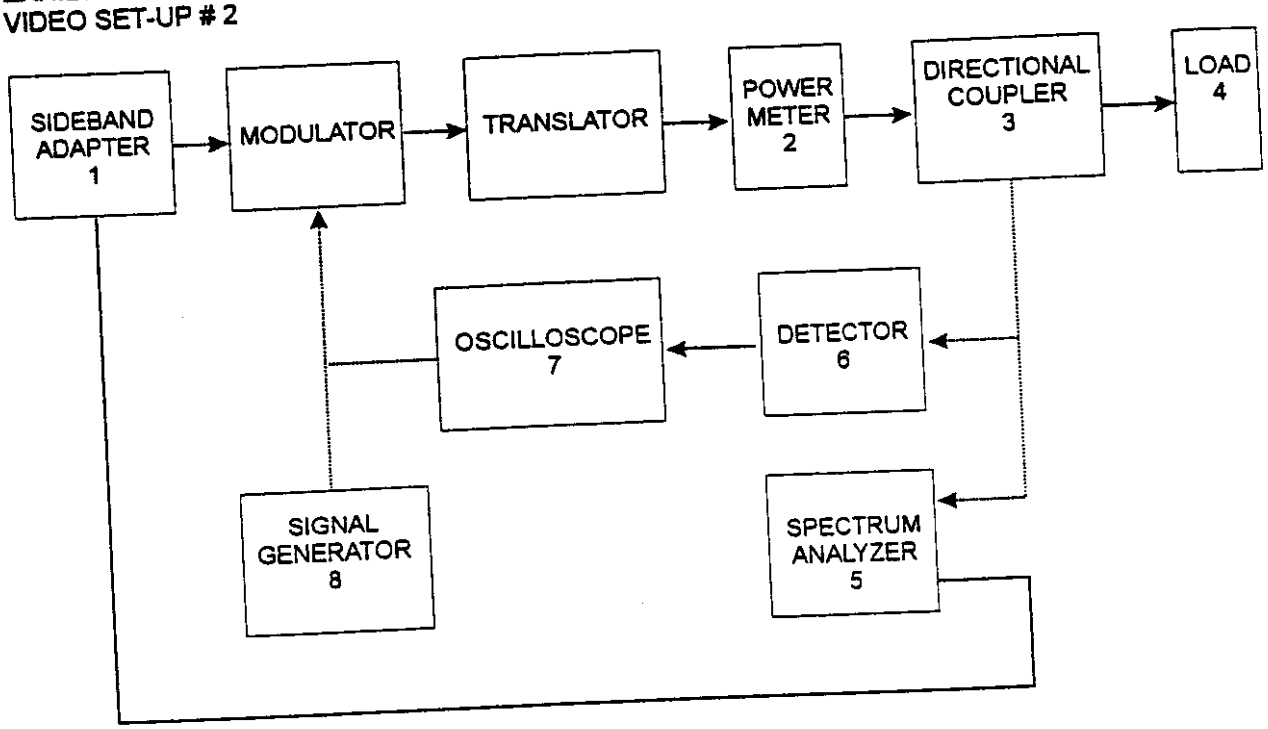


NOTES AND EQUIPMENT LIST

1. Video Generator - TEKTRONIX 1910 - Serial Number B010219
2. Power Meter - BIRD MODEL 43 - Serial Number 216291
3. Directional Coupler - CONNECTICUT MICROWAVE #250006
4. Load - DIELECTRIC 5750 - Serial Number 2354
5. Spectrum Analyzer - HEWLETT PACKARD 8591E - Serial Number 3325A01739
6. Demodulator - TEKTRONIX 1450-1 - Serial Number B020559
7. Waveform Monitor - TEKTRONIX 1780R - Serial Number B022663
8. Vectroscope - TEKTRONIX 1780R - Serial Number B022663
9. Group Delay Set - TEKTRONIX VM700A - Serial Number B040433
10. Dipole Antenna Cut to Frequency (For Field Strength Measurement Only)

APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
MODULATOR INPUT
1 WATT VHF TRANSLATOR

EXHIBIT 3b
VIDEO SET-UP # 2



NOTES AND EQUIPMENT LIST

1. NTSC Sideband Adapter - TEKTRONIX 1405 - Serial Number B040665
2. Power Meter - BIRD MODEL 43 - Serial Number 216291
3. Directional Coupler - CONNECTICUT MICROWAVE #250006
4. Load - DIELECTRIC 5750 - Serial Number 2354
5. Spectrum Analyzer - HEWLETT PACKARD 8591E - Serial Number 3325A01739
6. Larcan-TTC Active Detector - Serial Number 002
7. Oscilloscope - TEKTRONIX 2465 - Serial Number B025622
8. Signal Generator - HEWLETT PACKARD 651A - Serial Number 434-00449

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EXHIBIT 4a

FREQUENCY DRIFT VS. TEMPERATURE
CAMS-60b MODULATOR

DEGREES C	MEASURED LO FREQUENCY(Hz)	DEVIATION(Hz)	DEVIATION(%)
+50	181,250,375	233	0.000129
+40	181,250,356	214	0.000118
+30	181,250,281	139	0.000077
+25	181,250,142	0	0.0000
+20	181,250,100	-42	-0.000023
+10	181,250,269	127	0.000070
0	181,250,488	346	0.000191
-10	181,250,627	485	0.000268
-20	181,250,495	353	0.000195
-30	181,250,034	-108	-0.000060

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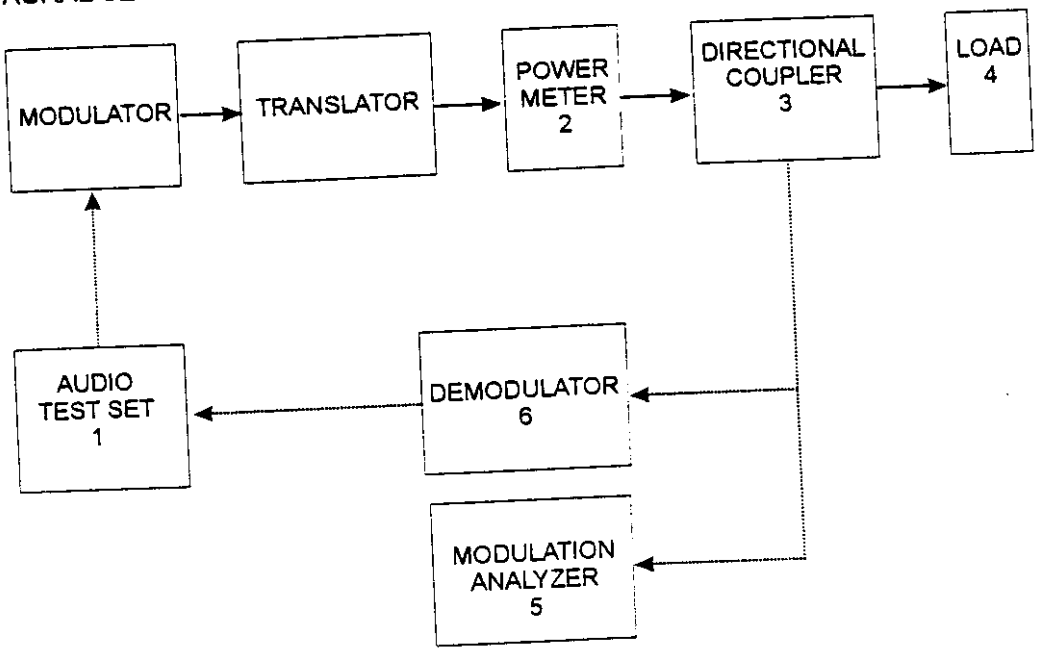
EXHIBIT 5
AURAL SET-UP



NOTES AND EQUIPMENT LIST

1. AUDIO TEST SET - HP339A - SERIAL NUMBER 1730A00691
2. POWER METER - BIRD MODEL 43 - SERIAL NUMBER 216291
3. DIRECTIONAL COUPLER - CONNECTICUT MICROWAVE - PART NUMBER 250006
4. LOAD - DIELECTRIC 5750 - SERIAL NUMBER 2354
5. MODULATION ANALYZER - HP8901A - SERIAL NUMBER 2911A05212
6. DEMODULATOR - TEKTRONIX 1450-1 - SERIAL NUMBER B020559

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EXHIBIT 6

ACTIVE DEVICES AND FUNCTION LIST

MODULE: PHASE SHIFTER #10A1453G6

DEVICE	TYPE	FUNCTION
U2	MHW6185	Hybrid Amplifier
U3	MWA330	RF Amplifier

MODULE: METERING BOARD #20B1235G5

DEVICE	TYPE	FUNCTION
Q1	MPS8598	Amplifier
VR1	MC78I12CP	Voltage Regulator
U1	LM358N	Operational Amplifier

APPLICATION FOR FCC CERTIFICATION
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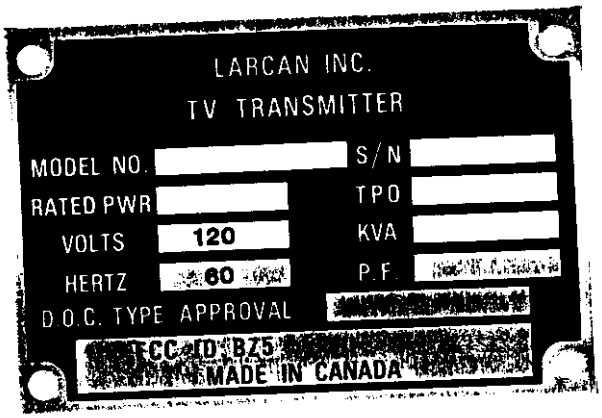
EXHIBIT 7

FCC IDENTIFICATION LABEL



APPLICATION FOR FCC CERTIFICATION
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1 WATT VHF TRANSLATOR

EXHIBIT 8

Power requirements for the 1 Watt VHF Translator were determined as follows:

1. The translator's visual power meter measures the peak visual power by reading the average levels of a detected sample of the output. The meter is calibrated by multiplying the above visual power reading by 168%. The visual metering circuitry has a negligible response to the aural power due to the large (>10MHz) detector bandwidth. When the detector bandwidth is this large, the detector does not peak detect the intercarrier beat product.

2. The aural power is measured by reading the peak level of the detected 4.5MHz intercarrier product. The level of this product has a direct correspondence to the aural power level and is independent of the visual power as long as the peak visual power exceeds the aural power. This is always true for normal operation.

BZ5MX1V
POWER MEASUREMENTS

MEASURED VISUAL POWER NOTE 1	MEASURED AURAL POWER NOTE 2	SUPPLY CURRENT TO OUTPUT DEVICES VISUAL ONLY NOTE 3	SUPPLY CURRENT TO OUTPUT DEVICES VISUAL & AURAL NOTE 3
0.595 WATTS	0.1 WATTS	0.50 AMPS	0.50 AMPS

NOTE 1: Measured on the Model 43 Bird Wattmeter with the visual carrier modulated by the standard synchronizing signal at 75% of peak amplitude and the aural carrier disabled.

NOTE 2: Measured on the Model 43 Bird Wattmeter with the visual carrier disabled.

NOTE 3: The voltage across the output devices on all models is +24 volts. The output devices are operated Class A.

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MODULATOR INPUT
1 WATT VHF TRANSLATOR

EXHIBIT 9a
OVERALL ATTENUATION CHARACTERISTIC

MODULATING FREQUENCY (MHz)	DETECTED OUTPUT (dB)	FCC LIMIT RELATIVE TO 0.2 MHz	FCC LIMIT RELATIVE TO 3.58 MHz
0.2	0 REF	———	———
0.5	+0.1	< -2	———
0.75	-0.4	———	———
1.0	-0.7	———	———
1.25	-5.2	< -8	———
1.5	-5.4	———	———
2.0	-6.0	< -9	———
2.1	-6.1	———	< ±2
2.5	-6.5	———	< ±2
3.0	-6.8	———	< ±2
3.58	-6.8	-6 ±2	REF
4.1	-7.0	———	< ±2
4.18	-7.9	———	< -4

EXHIBIT 9b

OVERALL ATTENUATION CHARACTERISTIC

MODEL NUMBER: BZ5MX1V

1) Dashed Line = Assumed Ideal Detector Output
2) X = Lower Limit Indicated Frequency
3) ⊙ = ± 2dB Limit of 3.58 MHz Relative to 200kHz
4) Frequency Between 2.1 & 4.1 MHz Shall Not Vary More Than ± 2dB Relative 3.58MHz
5) 4.18MHz Must Be Less Than 4dB Below 3.58MHz

APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
MODULATOR INPUT
1 WATT VHF TRANSLATOR

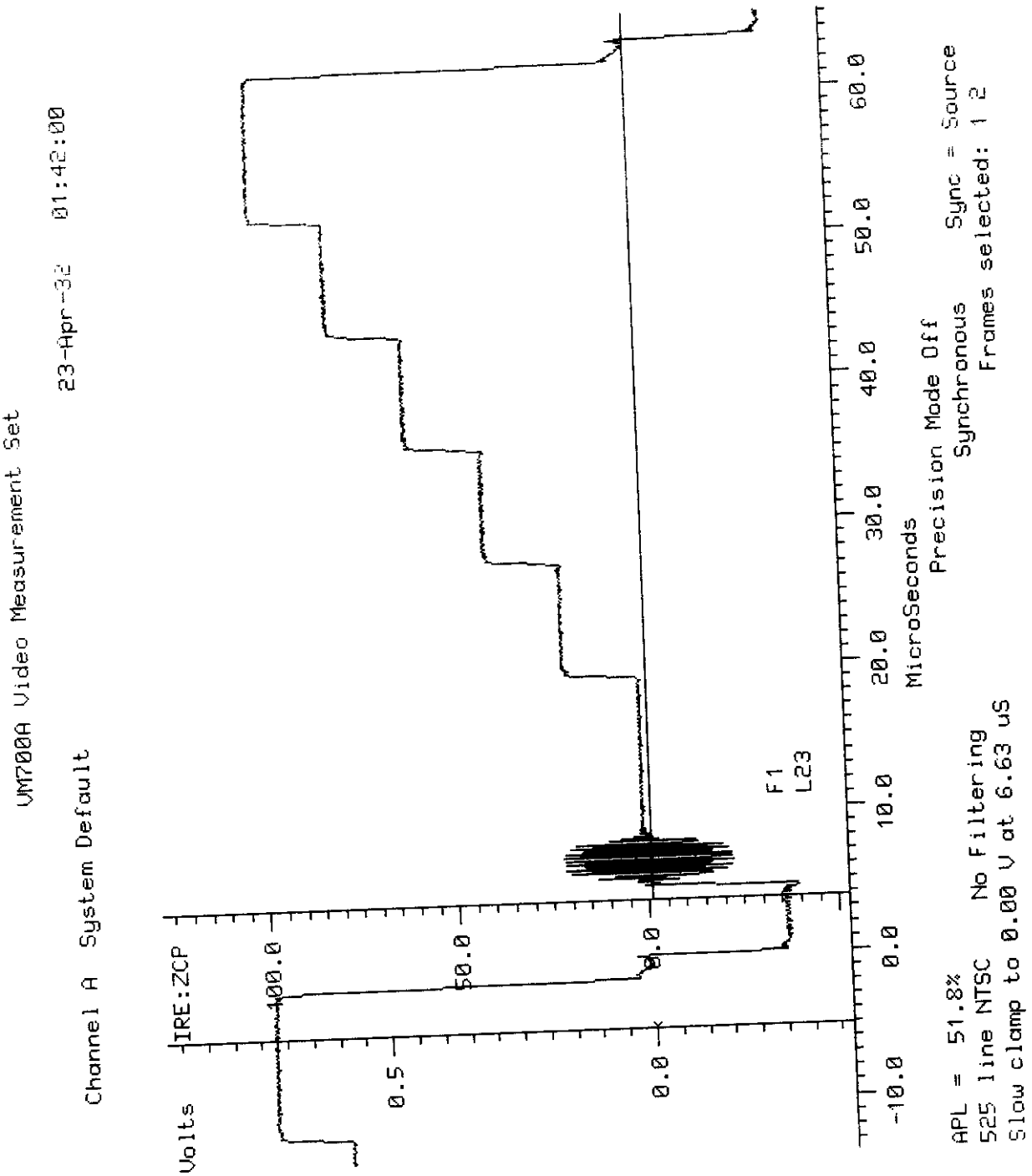
EXHIBIT 10

ATTENUATION VS. FREQUENCY

MODULATING FREQUENCY REF=VISUAL CARRIER(MHz)	UPPER SIDEBAND	FCC LIMIT(dB)	LOWER SIDEBAND	FCC LIMIT(dB)
+ 0.2	0	Reference	-	-
- 0.5	-0.5		-	-
+ 0.5	-0.1		-	-
+ 1.25	-0.3		-25	>-20
+ 2.0	-0.4		-27.5	>-20
+ 2.5	-0.4		-39	>-20
+ 3.0	-0.3		-46	>-20
+ 3.5	-0.3		-54	>-20
+ 3.58	-0.2		-56	>-42
+ 4.1	-0.3		-64	>-20
+ 4.18	-0.2		-70	>-20
+ 4.75	-27.2	>-20	-71	>-20
+ 5.0	-27.7	>-20	-74	>-20
+ 6.0	-63	>-20	-76	>-20
+ 7.0	-71	>-20	-77	>-20
+ 8.0	-89	>-20	-80	>-20
+ 9.0	-98	>-20	-84	>-20
+10.0	-105	>-20	-85	>-20

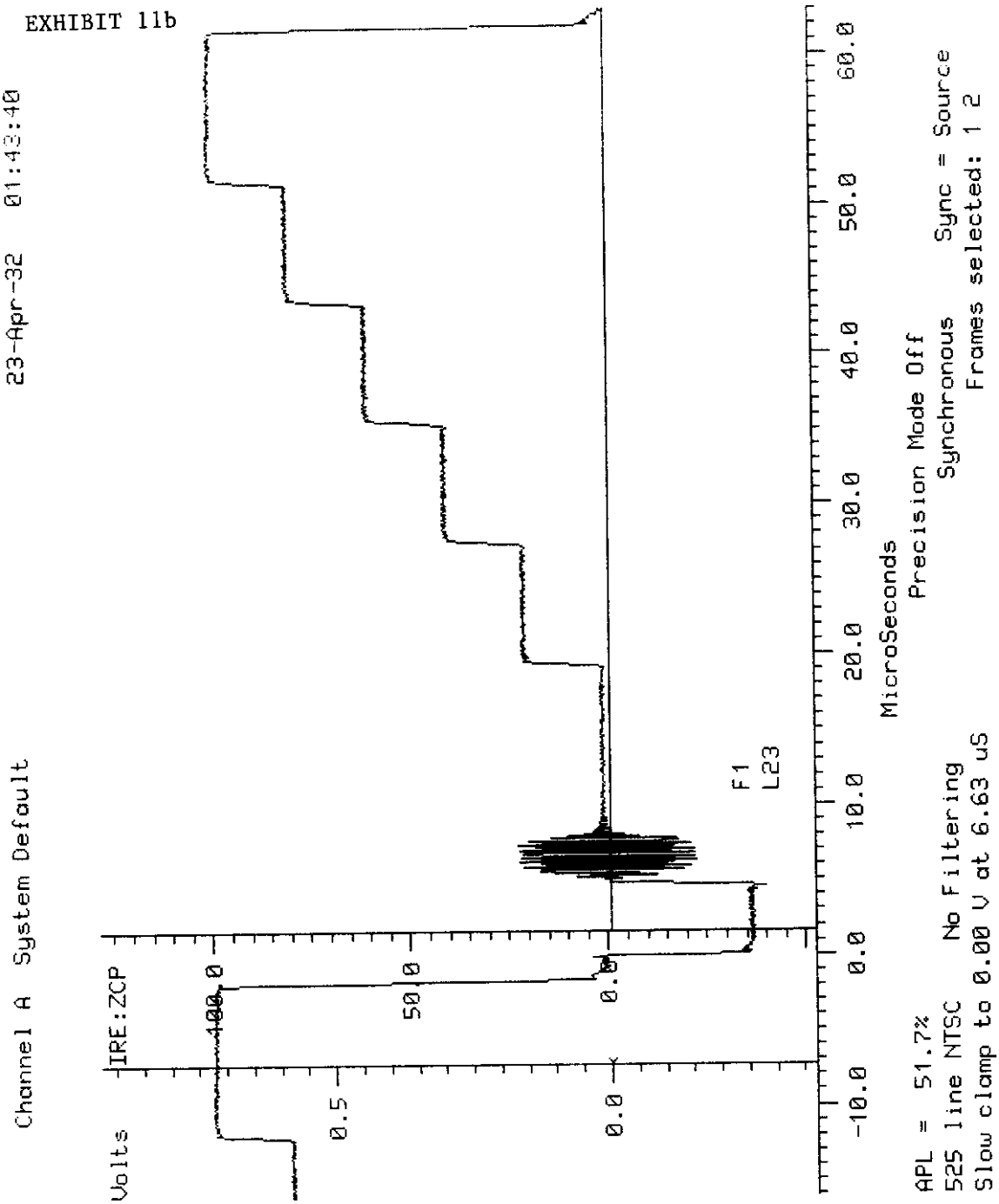
APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
MODULATOR INPUT
1 WATT VHF TRANSLATOR

EXHIBIT 11a



APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
MODULATOR INPUT
1 WATT VHF TRANSLATOR

EXHIBIT 11b



APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
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1 WATT VHF TRANSLATOR

VM700A Video Measurement Set

23-Apr-32 01:52:21

Channel A System Default

Wfm --> Mod Ramp

DG DP (NTSC)
Field = 1 Line = 23 (Synchronous)
Differential Gain (%) min = -2.48 max = 1.59 p-p/max = 4.01
0.00 -0.17 0.65 1.20 1.53 1.59 1.54 1.10 0.53 -0.64 -2.48

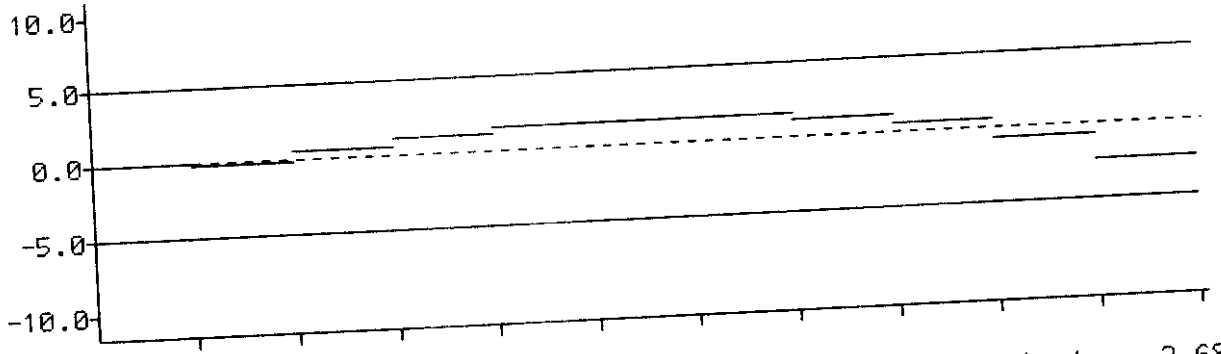

EXHIBIT 11c

Differential Phase (deg) min = 0.00 max = 3.68 pk-pk = 3.68
0.00 0.08 0.11 0.26 0.35 0.50 0.79 1.03 1.59 2.15 3.68

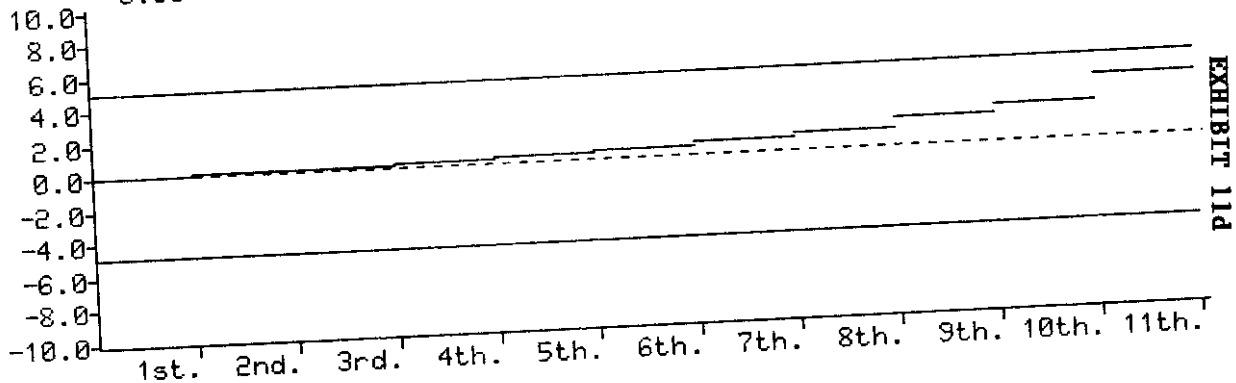

EXHIBIT 11d

Average 32 -> 32

APPLICATION FOR FCC CERTIFICATION
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EXHIBIT 12a

OVERALL GROUP DELAY

FREQUENCY(MHz)	OVERALL DELAY(nS)
0.20	0 (Reference)
0.40	+20
0.60	+30
0.80	-40
1.00	-30
1.20	0
1.40	-10
1.60	-10
1.80	-20
2.00	-10
2.20	-20
2.40	0
2.60	+10
2.80	+10
3.00	-20
3.20	-40
3.40	-100
3.58	-130
3.80	-180
4.00	-300
4.18	-320

APPLICATION FOR FCC CERTIFICATION
BZ5MX1V
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EXHIBIT 12b

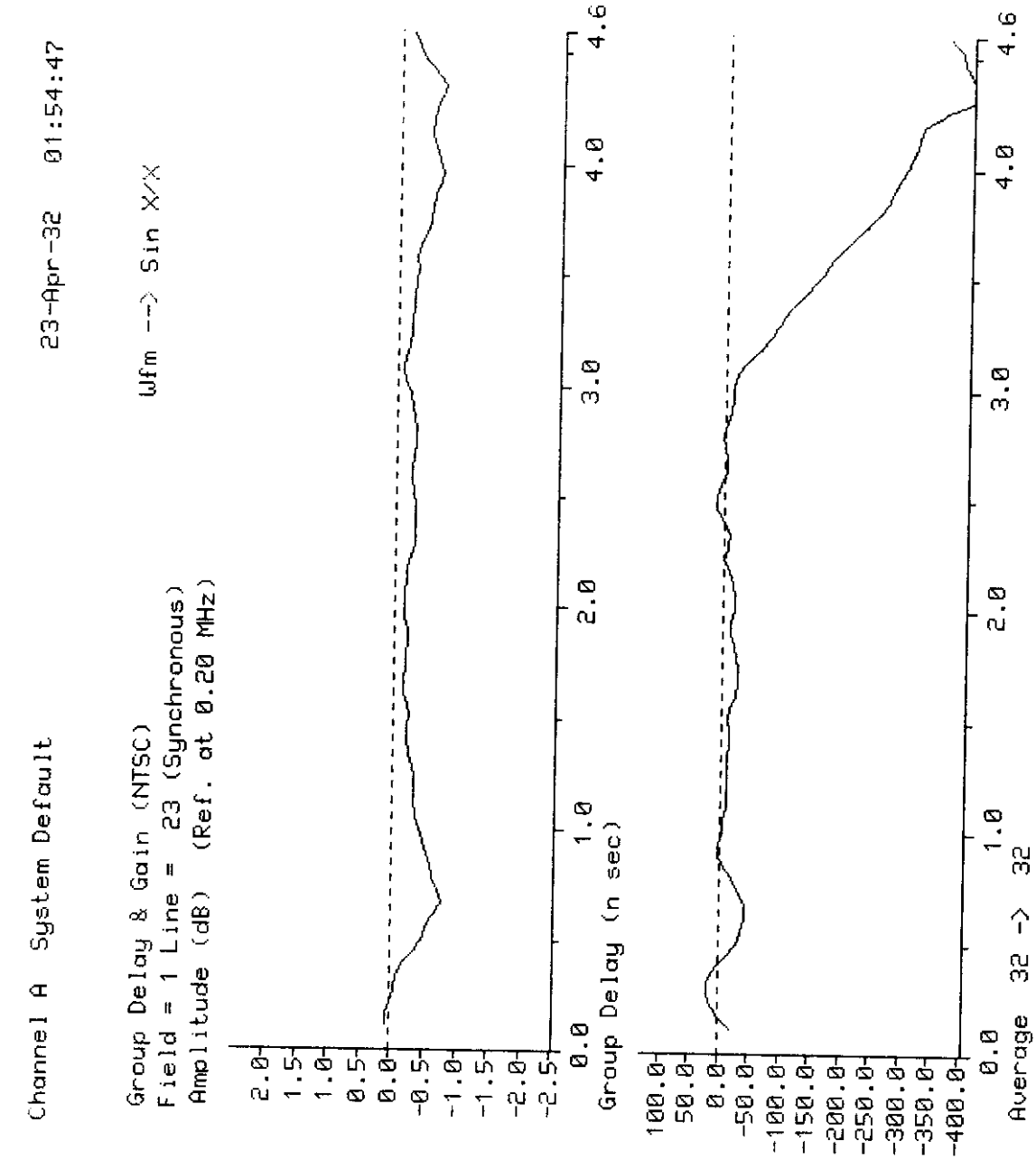
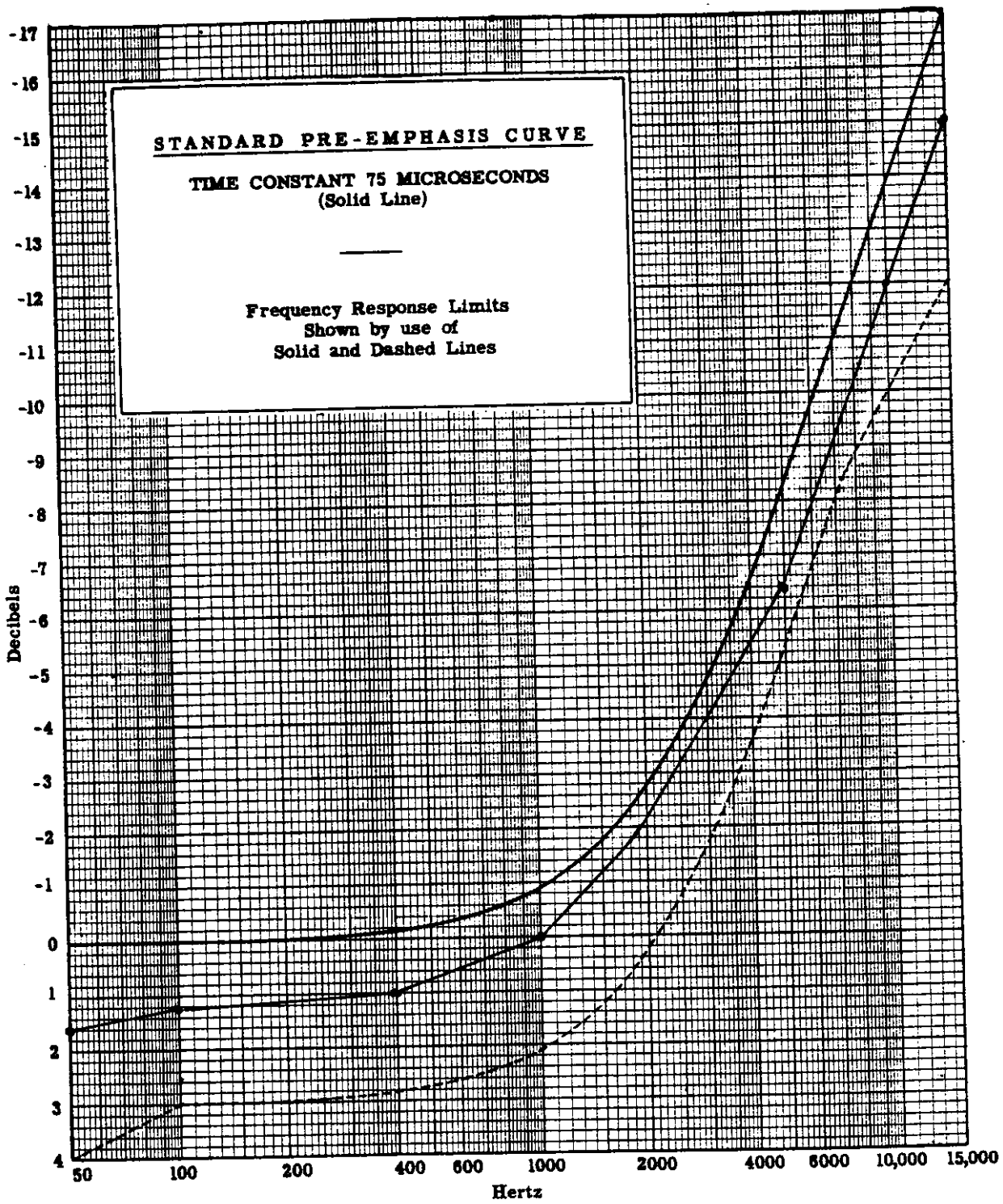


EXHIBIT 13 MODEL NUMBER: BZ5MX1V

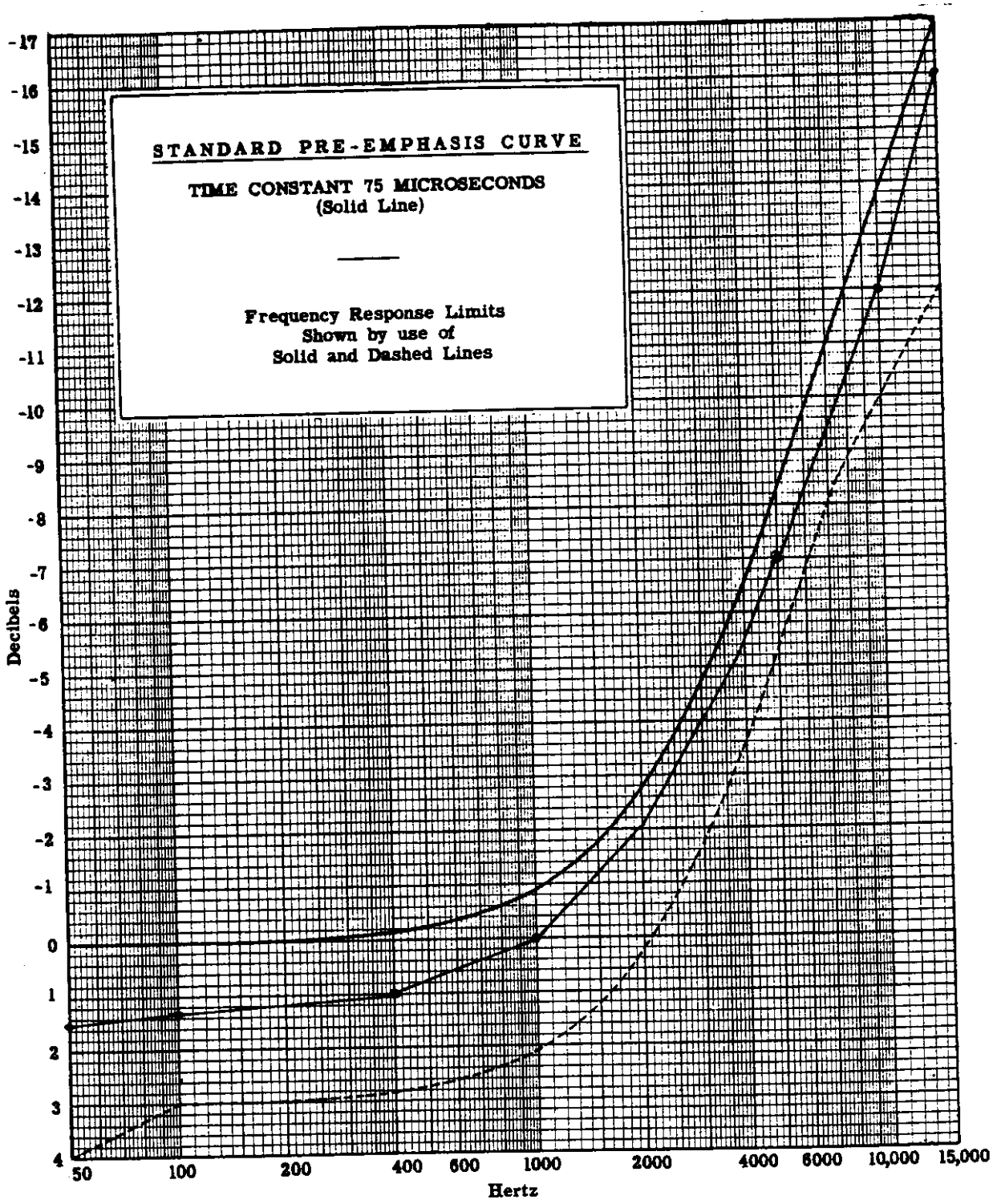
AUDIO FREQUENCY RESPONSE 25 % MODULATION



Reference 50 Hz; 0dB = 1.5 dB

EXHIBIT 14 MODEL NUMBER: BZ5MX1V

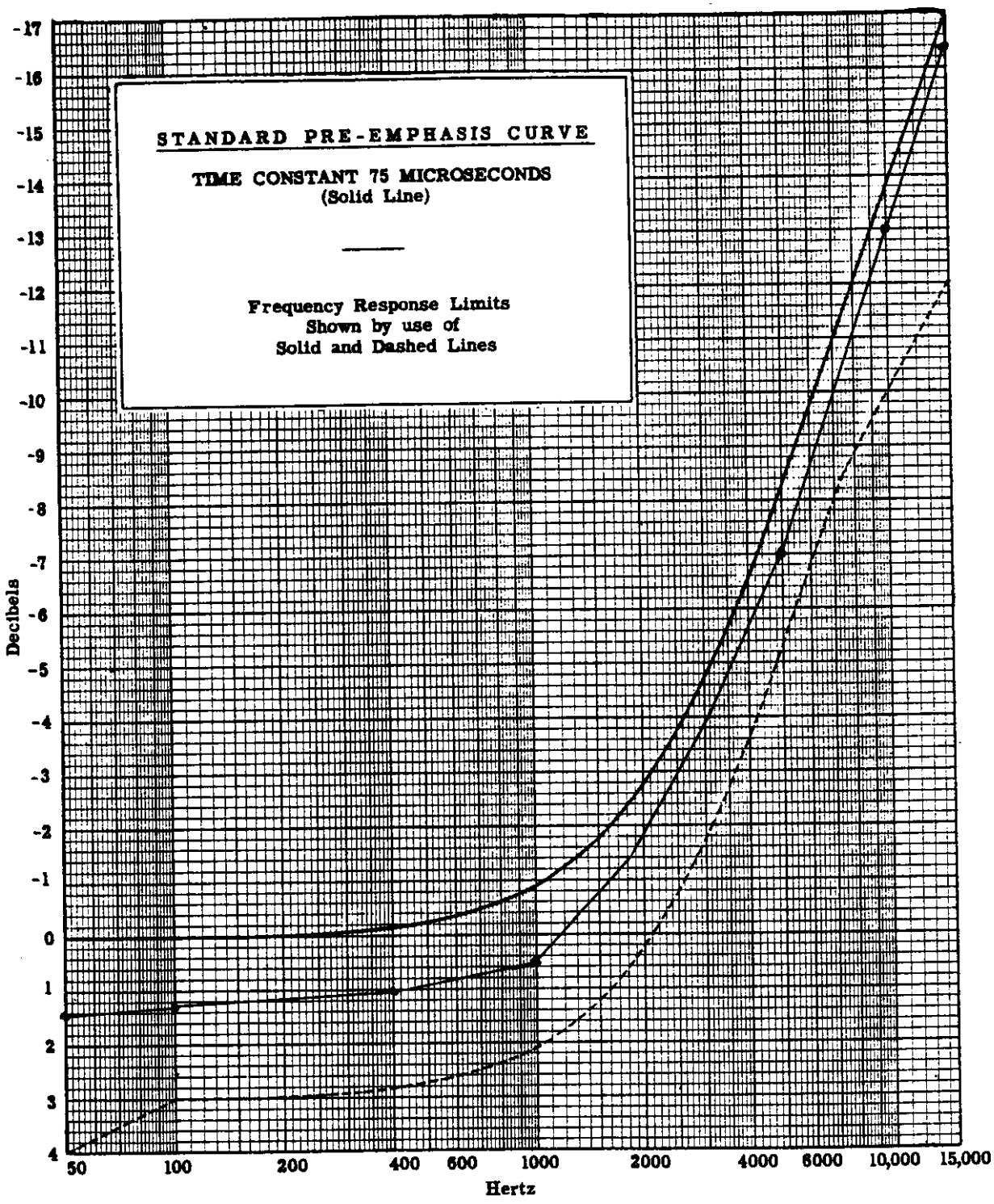
AUDIO FREQUENCY RESPONSE 50 % MODULATION



Reference 50 Hz; 0dB = 1.5 dB

EXHIBIT 15 MODEL NUMBER: BZ5MX1V

AUDIO FREQUENCY RESPONSE 100% MODULATION



Reference 50 Hz; 0dB = 1.5 dB